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NEMATOLAMPAS, A REMARKABLE NEW CEPHALO- POD FROM THE SOUTH PACIFIC.

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In a collection of Cephalopoda from Sunday Island, one of the Kermadec Group, which has been recently placed in my hands for investigation, is a new oegopsid possessing features of such general interest that the sender of the specimens, Mr. W. R. Oliver of Auckland, has kindly permitted me to offer the following brief preliminary account of the species in an American publication pending the appearance of a full report on the collection in the Transactions of the New Zealand Institute.

Nematolampas regalis new genus and species.

The body is small, cylindro-conical in outline, and terminates in a not very sharp point posteriorly. The fins are very large in proportion to the body, their combined width being as great as the length of the latter, although they are not quite half so long. They are practically continuous with one another above, at least posteriorly, and their union with the mantle is very insecure in alcoholic material. On each side of the extreme posterior tip of the body and lodged in the angle between the fin and mantle is a small swelling containing a conspicuous heavily pigmented body of spherical outline which from its general appearance has undoubtedly a photogenic function. This entire mass with its contained organ is not very firmly attached and becomes readily dislodged when the fins have been loosened.

The head is relatively large, short, and rounded. The eyes are very large. Bordering the ventral periphery of each eyeball is a longitudinal series of five beadlike photophores of a reddish color. Of these the central one is considerably the largest and so conspicuous that it is readily visible through the outer integument. Both it and the smaller organs just adjacent to it are

circular-ovate in outline, but the terminal organs are comparatively narrow and elongate.

The arms are unequal in length, and in one instance, that of the ventro-lateral pair, this inequality is of a very extraordinary nature. This arm pair is in any case the longest and their basal portions much the stoutest, but furthermore each terminates in an exceedingly slender beaded filament which when straightened out is considerably longer than the entire remaining portion of the animal and is devoid of suckers, though the arm proper is normal in this respect. The entire arm bears a succession of small but heavily pigmented photogenic organs scattered at various intervals along its outer margin. On the filament these appear as swellings or tubercles, often half as large in diameter as the filament itself, but on the basal portion of the arm they become rather deeply imbedded and are not easily seen except by transmitted light. Including its filament the better preserved arm of this pair carries a total of thirty-one photophores. The remaining arms are normal as regards their extremities, but those of the dorsal and dorso-lateral pairs bear each a single photophore near the tip. All the arms bear two rows of small suckers, but no hooks. The order of relative length is 3, 2, 4, 1.

The tentacles are about as long as the mantle, their clubs little expanded and armed with four rows of suckers. Each has a pale indistinct swelling in the stalk a short distance from the base and a similar one a little distance below the club. Except that the proximal one is situated considerably nearer the base of the stalk, these swellings occupy a region analogous to the position of the tentacular photophores described by Chun for *Thaumatomolampas* (1903, p. 570, fig.; 1910, p. 59, pl. 1-4) and quite likely represent similar structures.

As in *Thaumatomolampas* also some of the more important luminous organs lie within the mantle cavity and in the living animal are visible only by reason of the transparency of the pallial tissues. These organs are eight in number and throughout are clearly homologous in the two genera. The two anterior are situated one on either side of the alimentary canal just back of the funnel and correspond to the anal organs of Chun.

In the present form they are quite small. A little behind the middle of the body is a very conspicuous transverse series of five organs. The central one is unpaired. Close to it on each

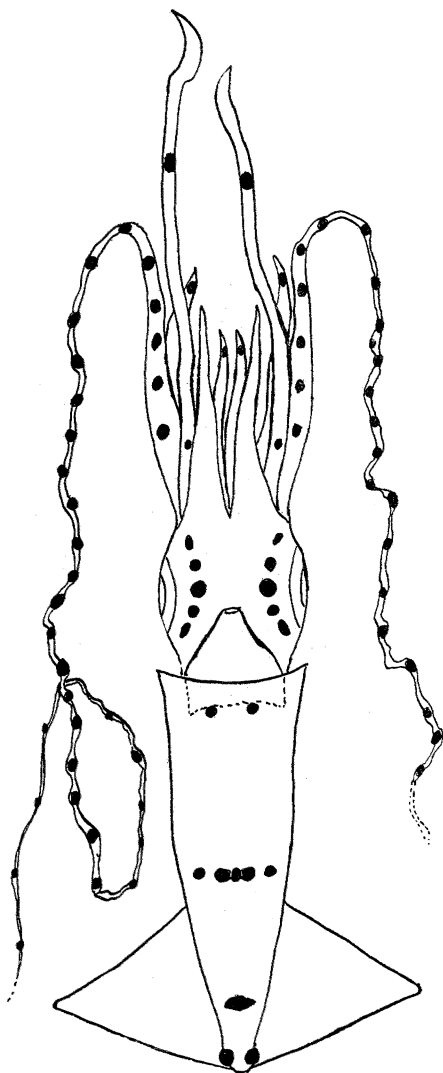


FIG. 1.

side is a very large flattened organ. The terminal organs are the smallest of the series and situated one at the base of each

gill. In the posterior part of the pallial chamber between the fins is a large unpaired organ.

The medio-dorsal length of the mantle is 32 mm., the width of the same 11 mm. The length of the entire animal exclusive of the tentacles and the filaments of the third arms is about 57 mm. The length of the third arm pair is over 70 mm.

From the above account it will be seen that this small squid possesses no fewer than ninety definitely and symmetrically arranged photogenic organs, and it may well be that there are even others which have escaped my search, as the opacity of the tissues in preserved material in many cases renders their detection difficult. Those which I have been able to make out are shown somewhat diagrammatically in the accompanying drawing, and also in the following tabular statement:

Ventral periphery of eyeball.....	10
Tip of dorsal arms.....	2
Tip of dorso-lateral arms.....	2
Ventro-lateral arms.....	62 +
Tentacles.....	4
Within pallial chamber:	
Anal.....	2
Branchial.....	2
Abdominal.....	4
Posterior extremity of body.....	<u>2</u>
Total.....	90

No cephalopod heretofore described is at all comparable to this creature excepting the wonderful *Thaumatolampas diadema* Chun, already mentioned, and the *Lycoteuthis jattai* of Pfeffer ('00, p. 161), both of which are now thought by the latter author to be based upon the same species ('08, p. 294). Chun, in the course of his amazing description of the luminous organs of *T. diadema*, says, "Unter allem, was uns die Tiefseethiere an wunder-vollen Färbungen darbieten, lässt sich nichts auch nur annähernd mit dem fast magischen Kolorit dieser Organe vergleichen. . . . Es war eine Pracht!" But to judge merely from the anatomy of *Nematolampas*, even *Thaumatolampas* must be outmarveled in life by this wonderful mollusk from the Kermadecs.

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